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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/732,817	12/11/2003	Koji Ishizaki	DAIN : 758	5883
25944	7590	09/18/2006	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			QI, ZHI QIANG	
			ART UNIT	PAPER NUMBER
			2871	

DATE MAILED: 09/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/732,817	ISHIZAKI, KOJI	
	Examiner	Art Unit	
	Mike Qi	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 and 17-19 is/are pending in the application.
- 4a) Of the above claim(s) 1-11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-15 and 17-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 5, 2006 has been entered.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 12, 14 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,818,615 (Abileah et al) in view of US 6,573,959 (Molsen) and further in view of US 5,926,241 (Gunning, III).

Regarding claim 12, **Abileah** teaches (col.18, line 28 – col.20, line 4; Fig.11) that patterned retardation films (208, 210, 212) having different retardation values and corresponding to the three colored subpixels (blue, green, red). **Abileah** further teaches (col.24, lines 14-22; Fig.16) that the retardation values of each retardation film of the respective subpixels is varied by varying the thickness thereof to create different retardation values. As a generally available knowledge, using radiation would achieve

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actinic effect to control the thickness of the polymerizable liquid crystal layer so that varying the quantity of the radiation would create the fine areas corresponding to the three colored subpixels. Abileah further teaches (col.26, lines 14-38) that such patterned retardation films according to colors improves the contrast ratio of each color and prevents excess leakage of one color relative to other colors at particular viewing angles.

Abileah does not explicitly teach bringing the cured liquid crystal layer into contact with an organic solvent to develop uncured component of the liquid crystal and further curing (second radiation) the cured liquid crystal layer into contact with the organic solvent.

However, the process to generate such different thickness of an optical element in which first curing the material such as liquid crystal by radiation and then developing it by organic solvent that is conventional process. As evidence, **Molsen** teaches (col.5, lines 5-30) that a method of manufacturing an optical element in which exposing a first part of a layer (curing), exposing a second part of the layer (curing), and then developing the layer (bringing it into contact with an organic solvent, i.e., conventionally developing an optical film by bringing it into contact with an organic solvent), so that the resultant layer will have regions of different thickness.

Therefore, it would have been obvious to those skilled in the art at the time the invention was made to modify the retardation element having different thickness of Abileah with the teachings of manufacture process bringing cured material into solvent to develop the material as taught by Molsen, since the skilled in the art would be

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motivated for achieving an optical element having different thickness, and first curing by radiation and then using solvent to develop the material to remove the undesired portion so as to generate a optical layer having different thickness.

Abileah and Molsen teach the invention set forth above except for further curing (second radiation) the cured liquid crystal layer into contact with the organic solvent.

Gunning teaches col.5, line 15 – col.6, line 65;Fig.3) that a process for fabricating a photo-patterned compensator, i.e., a process of producing a retardation element for use in a display element having pixels in which further applying second radiation (such as step 335 illuminating the film with ultraviolet radiation) so as to polymerize the previously unpolymerized region of the film, and in this operation the ultraviolet radiation cures those regions using similar condition as the previous curing (i.e., to bringing the cured liquid crystal layer into contact with the organic solvent again and using second radiation to fully cure the uncured component of the cured liquid crystal layer.). As a general available knowledge, applying second radiation would obtain more secured curing result.

Therefore, it would have been obvious to those skilled in the art at the time the invention was made to modify the retardation element fabrication process of Abileah and Molsen with the teachings of applying second radiation as taught by Gunning, since the skilled in the art would be motivated for more secure curing the material.

Regarding claims 14 and 18, Abileah, Molsen and Gunning teach the invention set forth above except for the radiation at a temperature higher than room temperature.

Gunning further teaches (col.5, line 15 – col.6, line 65; Fig.3) that a process for fabricating a photo-patterned compensator, i.e., a process of producing a retardation element for use in a display element having pixels in which typically the curing at a temperature between 80°C to 100°C (higher than room temperature), and that is typical used process, and that would have been at least obvious.

Therefore, it would have been obvious to those skilled in the art at the time the invention was made to modify the retardation element fabrication process of Abileah, Molsen and Gunning with the teachings of curing process at temperature higher than room temperature as taught by Gunning, since that is the skilled in the art being typically used process.

3. Claims 13, 15, 17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abileah, Molsen and Gunning as applied to claims 12, 14 and 18 above, and further in view of US 2002/0041352 A1 (Kuzuhara et al).

Regarding claims 13, 15, 17 and 19, Gunning and Abileah teach the invention set forth above, and Gunning further teaches (col.6, lines 14-53) that the temperature for the illuminating and the heating is adjusted to 90°C that is higher than the room temperature. Abileah, Molsen and Gunning lack that the radiation is applied to the liquid crystal layer in an atmosphere of nitrogen.

Kuzuhara teaches (paragraph 0379) that it is preferable to radiate the actinic rays in the nitrogen circumstances to avoid delaying polymerization reaction so as to reduce reaction time for effective hardening.

Therefore, it would have been obvious to those skilled in the art at the time the invention was made to modify the retardation element fabrication process of Abileah Molsen and Gunning with the teachings of radiating the actinic rays in nitrogen atmosphere as taught by Kuzuhara, since the skilled in the art would be motivated for achieving effective hardening (see paragraph 0379).

Response to Arguments

4. Applicant's arguments filed on July 5, 2006 have been fully considered but they are not persuasive.

In response to applicant's argument that the references do not teach the further curing of a cured liquid crystal layer comprises applying second radiation to fully cure an uncured component of the cured liquid crystal layer subsequent to contact with an organic solvent, it is respectfully point out that in Gunning teaches col.5, line 15 – col.6, line 65;Fig.3) that a process for fabricating a photo-patterned compensator, i.e., a process of producing a retardation element for use in a display element having pixels in which further applying second radiation (such as step 335 illuminating the film with ultraviolet radiation) so as to polymerize the previously unpolymerized region of the film, and in this operation the ultraviolet radiation cures those regions using similar condition as the previous curing (i.e., to bringing the cured liquid crystal layer into contact with the organic solvent again and using second radiation to fully cure the uncured component of the cured liquid crystal layer.). As a general available knowledge, applying second radiation would obtain more secured curing result.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mike Qi whose telephone number is (571) 272-2299.

The examiner can normally be reached on M-T 8:00 am-5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ZRQ

Mike Qi
Patent examiner
Sep.13, 2006